

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/28/2008 has been entered.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18-19 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter.

Claims 18-19 are directed to an N to N replicated data store. Applicant has provided antecedent basis for the claim terminology “replicated data store” (*Specification says, "Thus the invention is directed in embodiments to an N to N replicated data store and presentation", see [0006]*). However, Applicant has not provided an explicit and deliberate (*i.e., limiting*) definition of the terminology. The specification does not provide any further guidance beyond providing the antecedent

basis, as mentioned above, as to what constitutes the claimed “replicated data store”. A replicated data store in the broadest reasonable interpretation can be interpreted to constitute nothing more than a collection of data. According to a publication titled “Introduction to Windows Peer-to-Peer Networking” by Microsoft Corporation (hereinafter referred to as IWP2P), a replicated store is the set of records associated with a graph that are securely published and synchronized between all the members of a group in a peer-to-peer network. The replicated store represents the view of the group data, which should be the same for all group members (page 21, lines 23-27). Given the above definition, an N to N replicated data store as claimed constitutes mere collection of data and hence considered to be non-functional descriptive material. Non-functional descriptive material is considered to be non-statutory even if claimed in combination with a physical medium since it does not impart any functionality to the computer.

However, in the Remarks filed on 8/13/2007, Applicant mentions, “*Claim 17 recites a ‘replicated data store’ that ‘stores’ objects from one computer onto another computer*” (see [0026] in page 18). Therefore, based on the claim language of claim 18 and Applicant’s remark, an “N to N replicated data store” can at best be reasonably interpreted to be directed to “functional descriptive material” intended to be used for maintaining a substantially identical copy of an object on each of N peer computers interconnected via a peer-to-peer network by propagating and storing copies of objects from one computer onto another computer. Claim 18 also recites that the “N to N replicated data store” comprises a peer-to-peer networking module on each of the N interconnected computers, and a data source on each of the N interconnected

computers as components. However, both the "peer-to-peer networking module" and the "data source" can reasonably be interpreted to be software per se. and the computers on which they reside are not positively claimed to be components of the claimed "N to N replicated data store". Hence claims 18-19 have been rejected for being directed to non-statutory subject matter under the meaning of 35 U.S.C. 101. The Examiner suggests that claim 18 can be amended similar to the amendment to claim 17 submitted on 05/28/2008 to positively recite the interconnected computers as components of the claimed "N to N replicated data store" in order to obviate the rejection as was suggested during the interview on May 23, 2008.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1,2,4-11,13-18,20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodisman (US 6,330,006 B1) in view of Microsoft Publication "Introduction to Windows Peer-to-Peer Networking" hereinafter IWP2P.

Claims 1,2,8-11,17,18, 20 and 21 are directed to synchronizing user interfaces on peer machines in a peer-to-peer network. In particular, data

binding is used to ensure that data sources and corresponding user interface objects remain mutually synchronized in each peer machine. Peer-to-Peer networking, specifically peer graph technique is used to propagate data records between the networked computers to ensure data source objects remain mutually synchronized in all peer machines across the network. Thus the invention is directed in embodiments to an N to N replicated data store and presentation.

Goodisman teaches utilizing data binding technique for synchronizing interface display objects (204 controlled by object 304 in Fig. 3) with underlying data contained in data source objects (308 in Fig. 3). He teaches how to bind an interface display object with an underlying data source object so that any change in any one of them can be communicated to the other in order to achieve synchronization (Summary of the Invention, also see Fig. 2-3 and relevant discussion under the heading “Design-Time Binding” and “Run-Time Binding in columns 5-8). However, Goodisman does not teach synchronizing user interfaces on a “plurality of peer machines” within a “peer-to-peer” network. He does not teach propagating data source objects between peers using peer graph in order to achieve synchronization. In short, Goodisman is missing some essential limitations, a “peer-to-peer” network and synchronization between the user interfaces on a plurality of peer machines on that network using peer graph.

However, IWP2P teaches using a Peer-to-Peer network that utilizes peer graph technique for synchronizing data between peer machines. It teaches that The Graphing component of a peer-to-peer network is responsible for maintaining a set of connected nodes known as a graph and providing flooding and replication of data across the graph.

The Graphing component uses the Flood & Synchronization, Store, and Graph Maintenance subcomponents (page 6). It further teaches that a peer graph, or graph, is a set of nodes that are multiply connected to form a coupled network of nodes for the purposes of propagating data in the form of records or point-to-point data streams. A peer graph is built and based on flooding. Flooding is the process of propagating a record to all users connected to a graph. A flooding protocol is used to do the following:

Propagate the addition of new records to all the nodes of the graph.

Propagate the updates of changed records to all nodes of the graph.

Propagate the deletion of deleted records to all the nodes of the graph.

In addition, a synchronization process ensures that peers have the same set of records, which can result in the flooding of more records (page 13). It also teaches replicated store wherein the replicated store is the set of records associated with a graph that are securely published and synchronized between all the members of the group. The replicated store represents the view of the group data, which should be the same for all group members (page 21).

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of the invention to combine the data binding technique taught by Goodisman with the graphing technique of peer-to-peer networking taught by IWP2P in order to provide an improved and simplified mechanism for synchronizing user interface elements over a peer-to-peer network. The motivation for the combination would have been to harness the various benefits of peer-to-peer networking for shared activities

(IWP2P, pages 1-3) as well as to simplify the synchronization problem of user interface objects and the underlying data using “data binding” technique to avoid potential for error where an application programmer is required to write code to ensure such synchronization (Goodisman, Background of the invention, column 2 lines 4-9). Also refer to the “Detailed Analysis of the Application and Rationale/Response for the Rejections” section in the response to arguments section (pages 12 to 33) in the Final Office Action for further explanation which is incorporated herein by reference.

For claims 4 and 13, Goodisman further teaches binding the display object on the first machine to the data source object comprises subscribing by the display object to notification of a change in one or more properties of the data source object (column 7 line 66 to column 8 line 6).

For claims 5 and 14, Goodisman further teaches providing a notification interface (304 in Fig. 3) by the display object to receive notification of a change in one or more properties of the data source object, and wherein notifying the display object from the data source object that a change in the data source object has occurred comprises calling of the notification interface by the data source object (Fig. 3, column 7 lines 31 – column 8 lines 64)

For claims 6,7,15 and 16, IWP2P teaches using peer-to-peer network to allow users to engage in a group interaction session over the network sharing media items (Sharing Your Experience, page 2).

Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodisman (US 6,330,006 B1) in view of IWP2P and further in view of Reilly.

Claims 3 and 12 are directed to employing a model of object persistence for extracting data from received records to create an object from the data of the received record. Neither Goodisman nor IWP2P explicitly mentions using a model of object persistence for this purpose. However, Reilly teaches object serialization, which uses a model of object persistence, to take an object's state and convert it to a stream of data for propagation so that the object can be restored at a later time, and even a later location. He teaches that with persistence, an object can be moved from one computer to another, and have it maintain its state (page 1). Therefore, it would have been obvious for a person of ordinary skill in the art at the time of the invention to combine the teachings of both Goodisman and IWP2P with that of Reilly in order to arrive at the instant invention. The motivation for employing a model of object persistence would have been to easily move an object from one computer to another having it maintain its state (Reilly, page 1).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodisman (US 6,330,006 B1) in view of IWP2P and further in view of Eriksson (PeerNet: Pushing Peer-to-Peer Down the Stack).

For claim 19, neither Goodisman nor IWP2P explicitly mentions that the peer-to-peer networking module implements the peernet protocol. However, Eriksson teaches peernet protocol for a peer-to-peer based network layer for large networks that implements a separation between address and identity in the context of a network protocol in order to avoid scalability issues. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of the invention to combine the teachings of both Goodisman and IWP2P with that of Eriksson in order to arrive at the instant invention. The motivation for using a peernet protocol would have been to make the network layer: a) minimize the need for manual configuration, b) avoid centralized solutions and node specialization in favor of distributed and peer-to-peer solutions, and c) localize control overhead (Eriksson, page 1).

Response to Arguments

The Examiner acknowledges and appreciates Applicant's Amendments and Arguments filed on 05/28/2008 which have been fully considered.

Substance of Interview

The Examiner agreed upon request from the Applicant to schedule an interview and discuss on the merits of the application and on the preliminary amendment.

Accordingly on May 23, 2008, the Examiner spoke with the Applicant's representative, and discussed § 101 issues and 1.131 declaration issue. The Examiner expressed his opinion that the proposed amendments appeared to be sufficient to obviate the objections to claims 10-16 and suggested some modification to claims 17-19 in order to place them squarely within statutory subject matter under the meaning of § 101. The Applicant's representative and the Examiner were unable to reach an agreement regarding the 1.131 declaration. However, the Examiner understood that the Applicant's representative agreed to cure the deficiencies of the declaration, or request a reconsideration of the declaration with arguments, and agreed to thoroughly review and reconsider Applicant's remarks regarding the declaration and amendments to the claims once they are filed on the record.

Claim objections

Previous objections to claims 10-16 are hereby withdrawn based on the amendments that recite "computer readable storage medium" (emphasis added). It would only be reasonable in the context of the application to interpret a "computer readable storage medium" to be directed to an appropriate physical article under the meaning of 35 U.S.C. § 101.

37 CFR 1.131 Declaration regarding Prior Invention

The declaration filed on 09/24/2007 under 37 C.F.R. 1.131 has been reconsidered in light of the arguments submitted by the Applicant on 05/28/2008 but is

ineffective to overcome the reference “Introduction to Windows Peer-to-Peer Networking (Microsoft Publication , Jan 2003) , hereinafter IWP2P.

The evidence submitted is insufficient to establish a reduction to practice of the invention in this country or a NAFTA or WTO member country prior to the effective date of the IWP2P reference.

Applicant has submitted a declaration along with redacted portions of a “Patent Pre-disclosure Document” as the sole exhibit allegedly indicating the “fact” that the inventor conceived and actually reduced the subject matter of the instant application to practice before the effective date of the reference IWP2P.

37 C.F.R. 1.131 (b) clearly states:

“The showing of facts shall be such, in character and weight, as to establish reduction to practice prior to the effective date of the reference, or conception of the invention prior to the effective date of the reference coupled with due diligence from prior to said date to a subsequent reduction to practice or to the filing of the application. Original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or declaration or their absence must be satisfactorily explained.” (Emphasis added).

In general, proof of actual reduction to practice requires a showing that the apparatus actually existed and worked for its intended purpose. See MPEP 715.07. For an actual reduction to practice, the invention must have been sufficiently tested to

demonstrate that it will work for its intended purpose, but it need not be in a commercially satisfactory stage of development. (See MPEP 2138.05). In order to establish prior invention, the evidence must show that the **claimed** invention is what was reduced to practice prior to the date of the reference sought to be antedated.

All that is submitted by the Applicant as evidence is a document prepared in the normal course of business that provides a summary of the instant invention along with two statements within the document alleging date of conception to be 2/26/2002 and date of reduction to practice to be 8/25/2002. At most the summary description of the invention provided in the "Patent Pre-disclosure Document" is evidence of conception (MPEP 715.07 I (H) says, "Disclosure documents may be used as documentary evidence of conception"), but such summary even with the statement alleging reduction to practice on 8/25/2002 is not sufficient evidence for making a legal determination of reduction to practice. The document does not provide objective evidence adequately explained so that the Examiner can evaluate the evidence and make a legal determination of whether the evidence in record supports a conclusion of reduction to practice prior to the effective date of the reference. There is no evidence submitted in the form of "original exhibit" to allow the Examiner to determine whether the invention summarized in the "Patent Pre-disclosure Document" and alleged to be reduced to practice on 8/25/2002 was in fact, (a) actually constructed, (b) as constructed meets the claim limitations, (c) was tested and found to be suitable for its intended purpose.

Under (c), there is no indication of what tests were performed, what the results consisted of, etc.

Thus applicant has not met his/her burden of **clearly** showing how the submitted evidence supports actual reduction to practice of the invention prior to the effective date of the reference sought to be overcome. Accordingly the Examiner retains the IWP2P reference for the rejections concerned.

Claim Rejections under § 103

Applicant basically argued that the obviousness rejections based on the IWP2P reference should be withdrawn based on the 1.131 declaration. Applicant's argument is moot since the 1.131 declaration along with the evidence accompanying it are deemed to be insufficient to establish reduction to practice of the instant invention prior to the effective date of the IWP2P reference as explained above.

Additionally, for independent claims 10 and 18, Applicant has argued that the purported combination of references fail to teach or suggest the limitation "***update to at least one of a plurality of fields in the data source object***". Applicant argued:

[0044] Rather, IWP2P requires that a record be replaced with a record containing a higher version number; rather than changing the record's contents during an "update." (p.13, "Graphing: ... To perform these functions[flooding], each flooded record that is identified by a globally unique identifier (GUID), has an increasing version number or

sequence number, and is further qualified by age or a status." This restriction of IWP2P is contrary to the instant application. Additionally, none of Goodisman, Reilly, nor Eriksson remedy this deficiency.

The Examiner disagrees. Claim 10 recites the limitation, "***wherein the change in the data source object comprises an update to at least one of a plurality of fields in the data source object***". Thus what is required is an "update" to at least one field in the data source object and thus bringing the data source object up to date, as by adding new information or making corrections to the data source object. The change is said to be in the "data source object" and not in a "record". Such "update" to a data source object does not necessarily require "changing the record's contents during an 'update'" as argued by the Applicant but can be introduced by a new record also. This is because a "data source object" and a "record" are two different things. The instant specification itself describes the distinction as shown below:

[0032] One suitable technology for sharing data within a peer-to-peer network is technology of peernet. Peernet uses data structures called records to transfer information throughout the peer-to-peer network. A record is typically data with accompanying metadata such as create time, expire time, type, size, etc. Thus, using peernet, if a song is added to a local user interface by a user, then in order for that change to propagate, the change must be recognized and the song, and data related to the song, must be transformed into pure data that can be sent via one or more records.

So, a "record" is pure "data", wherein a "data source" is an "object" (i.e., in object-oriented-programming terminology) comprising the "data". The claim only requires that at least one change takes place on a data source object in order bring the data source

object up to date. The combination of Goodisman and IWP2P teaches that at least one change takes place in a data source object since there is no need for synchronization if no change took place in the first place. Nevertheless, even for the arguments sake, if it is taken that the limitation requires "changing the record's contents during an 'update'" as argued by the Applicant, still the above teaching of IWP2P is not contrary to such requirement but in fact, appears to be teaching what the limitation requires. IWP2P reference does not mention that a record be replaced with a record containing higher version number. The reference mentions, "each flooded record that is identified by a globally unique identifier (GUID), has an increasing version number or sequence number, and further qualified by age or a status" as pointed out by the Applicant. This does not mention anything about replacing a record by another record containing a higher version number, but may very well be that the "version number" field or the "sequence number" field is "updated" by an increasing number as changes occur to a record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RASHEDUL HASSAN whose telephone number is (571)272-9481. The examiner can normally be reached on M-F 7:30AM - 4PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Weilun Lo can be reached on 571-272-4847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rashedul Hassan/
Examiner, Art Unit 2179

/Weilun Lo/
Supervisory Patent Examiner, Art Unit 2179